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NAME: Michael E. MauneyTELEPHONE #: 910 457-0056FAX #: (910) 457-6069COMMENTS: Re Appeal brief in 101714, 471 - Faxed  
AT Request of Appeal board.M Mauney

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application: Tianqing He et al. Examiner: Jiping Lu  
Filing Date: 11/15/03 Art Unit: 3749  
Serial No: 10/714,471 Appeal No.:  
Invention: DEVICE AND METHODS FOR RAPID DRYING OF POROUS MATERIALS

February 26, 2008

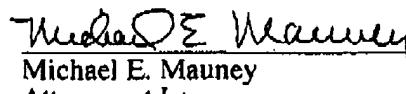
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Re: Notice of Prior Filing of Appeal Brief and Fee

Dear Sir or Madam:

In accordance with the suggestion of a paralegal at the Board of Patent Appeals, the undersigned is filing with the Examiner by fax a Notice a Brief was timely filed on December 13, 2007 by the undersigned in the above entitled Appeal. Accompanying this Notice is a photocopy of the Return Receipt postcard and check that was filed; a photocopy of the one-page cover letter; a photocopy of a 24-page Brief; a one-page Certificate of Service; a Claim Appendix of three pages; and an Evidence Appendix. The fax again is made at the suggestion of a paralegal in the Board of Appeals who suggested that the delay may be a simple administrative delay but that nevertheless a faxed copy of the Brief should be filed with the Examiner. Please call if you have questions or comments.

This the 27 day of Feb, 2008.

  
Michael E. Mauney  
Attorney at Law  
Post Office Box 10266  
Southport, NC 28461  
Telephone (910) 457-0056  
Registration #33731

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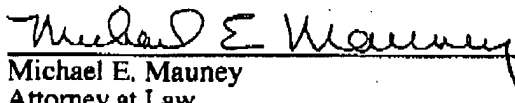
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This the 27 day of Feb., 2008.

  
Michael E. Mauney  
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCE

In Re Application: Tianqing He et al. Examiner: Jiping Lu  
Filing Date: 11/15/03 Art Unit: 3749  
Serial No: 10/714,471 Appeal No.:  
Invention: DEVICE AND METHODS FOR RAPID DRYING OF POROUS MATERIALS

December 13, 2007


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In accordance with current practice, enclosed is a Brief in the Appeal of the above case Serial No.: 10/714,471. Also enclosed is a check for two hundred and fifty-five dollars (\$255.00) the cost for filing a Brief for a small entity. Also enclosed is a return receipt post card. Please stamp the post card showing the date the Brief was received and return it to me. If anything further is required from me, please notify me immediately. Thank you very much for your immediate attention to this.

This the 13 day of Dec., 2007.

  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCE

In Re Application: Tianqing He et al. Examiner: Jiping Lu  
Filing Date: 11/15/03 Art Unit: 3749  
Serial No: 10/714,471 Appeal No.:  
Invention: DEVICE AND METHODS FOR RAPID DRYING OF POROUS MATERIALS

Board of Patent Appeals and Interference  
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BRIEF OF THE APPELLANT

This is an Appeal from a final rejection dated July 25, 2007 rejecting Claims 1, 3-10, 21, 23, and 27-34. Claims 2, 11-20, 22, 24-26, and 35-43 were canceled from the application. This Brief is accompanied by the requisite fee as set forth in § 1.117(f).

REAL PARTY IN INTEREST

The real party in interest is Instrotek, Inc., Assignee of record of the inventors Tianqing He et al.

RELATED APPEALS AND INTERFERENCE

There are no appeals or interference that would directly affect or be affected by the Board's decision in this pending Appeal.

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STATUS OF CLAIMS

This application was filed on November 15, 2003. In the original application, there were 43 claims. Claim 1 was an independent claim. Claims 2-22 were dependent on Claim 1. Claim 23 was an independent claim. Claims 24-43 were dependent on Claim 23. A restriction requirement was imposed on October 6, 2004. This restriction requirement stated that there were patentably distinct species of the claimed invention disclosed in Figures 1, 2, and 5 respectively. Applicant responded on October 11, 2004 stating: "As Applicant best understand the restriction requirement, the embodiment elected is shown in Figure 2." Applicant requested clarification stating: "Applicant sees that Figures 1 and 5 are directed toward an apparatus with a line bypassing a cold trap whereas Figure 2 is directed toward an apparatus with no line bypassing the cold trap. It is not believed there are three patentably distinct species of the claimed invention. At most, there might be two patentably distinct inventions. Does the Examiner think there are two or three distinct inventions and why. Clarification is respectively requested." Applicant also pointed out that there was no indication as to why there was a burden on the Examiner proceeding with the application without a restriction requirement. Applicant provisionally elected Claims 1-10, Claims 21-22, and Claims 23-34 for prosecution.

On January 15, 2005 the Examiner responded with the first substantive Office Action indicating that Claims 11-20 and 35-43 were withdrawn, as well as Claim 22. The Examiner rejected Claims 1-3 and Claim 23-26 under 35 U.S.C. 102(b) as being anticipated by Wennerstrum et al., U. S. Patent #4,882,851. Claims 4-5, 7-8, 27-28, and 30-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum '851 and further in view of Dhaemers, U. S. Patent #5,546,678. Claims 6, 9, 29, and 33-34 were rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Wennerstrum '851, Dhaemers '678 as applied to Claims 5 and 28 above, and further in view of Hunter et al., U. S. Patent #6,085,443. Claims 10, 21, and 32 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum '851, Dhaemers '678 as applied to Claims 5 and 28, and further in view of Davis et al., U. S. Patent #6,410,889. On March 22, 2005 Applicant responded to the restriction requirement by withdrawing Claims 11-20, 22, and 35-43. Applicant amended Claims 1, 3, 4, and 10 and canceled Claim 2. Applicant amended Claims 23 and

27 and canceled Claims 24, 25, and 26.

The Examiner responded in a final Office Action dated June 17, 2005. In the final Office Action, Claim 23 was rejected under 35 U.S.C. 102 as anticipated by Wennerstrum '851. Claims 27-28 and 30-31 were rejected under 35 U.S.C. 103(a) over the combination of Wennerstrum '851 and Dhaemers '678. Claims 29 and 33-34 were rejected over the combination of Wennerstrum '851, Dhaemers '678 as applied to Claims 5 and 28, and further in view of Hunter et al., U. S. Patent #6,085,443. Claim 32 was rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Wennerstrum '851, Dhaemers '678 as applied to Claims 5 and 28, and further in view of Davis '889. Claim 1 was rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum '851 in view of Sano et al., U. S. Patent #4,107,049. Claims 3-5 and 7-8 were rejected under 35 U.S.C. 103(a) over the combination of Wennerstrum '851, Sano '049 as applied to Claim 1 above, and further in view of Dhaemers '678. Claims 6 and 9 were rejected under 35 U.S.C. 103(a) over the combination of Wennerstrum '851, Sano '049, Dhaemers '678 as applied to Claim 5 above, and further in view of Hunter et al. '443. Claims 10 and 21 were rejected under 35 U.S.C. 103(a) over the combination of Wennerstrum '851, Sano '049, and Dhaemers '678 as applied to Claim 5 above, and further in view of Davis '889. Claims 1 and 23 were rejected under 35 U.S.C. 103(a) over Sano '049 in view of Wennerstrum '851. Claims 3-5, 7-8, 27-28, and 30-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sano '049 in view of Wennerstrum '851 as applied to Claims 1 and 23 above, and further in view of Dhaemers '678. Claims 6, 9, 29, and 33-34 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sano '049, Wennerstrum '851, Dhaemers '678 as applied to Claims 5 and 8 and further in view of Hunter '443. Claims 10, 21, and 32 were rejected under 35 U.S.C. 103(a) over the combination of Sano '049, Wennerstrum '851, Dhaemers '678 as applied to Claims 5 and 28 and in view of Davis '889.

Applicant responded in a Request for Continued Examination on September 6, 2005. The Examiner responded to the Applicant's Request for Continued Examination in a first Office Action dated December 1, 2005. The Examiner essentially repeated the rejections using the same combinations and the same language as outlined in the above paragraph. Claim 23 was rejected



under Wennerstrum '851. Claims 27-28, 30-31 was rejected over the combination of Wennerstrum and Dhaemers. Claims 29, 33, and 34 were rejected over the combination of Wennerstrum, Dhaemers, and Hunter. Claim 32 was rejected over the combination of Wennerstrum, Dhaemers, and Davis. Claim 1 was rejected under 35 U.S.C. 103(a) over the combination of Wennerstrum and Sano. Claims 3-5 and 7-8 were rejected over the combination of Wennerstrum, Sano, and Dhaemers. Claims 6 and 9 were rejected over the combination of Wennerstrum, Sano, and Dhaemers and in view of Hunter. Claims 10 and 21 were rejected over Wennerstrum and Sano and Dhaemers. Claims 1 and 23 were rejected over the combination of Sano and Wennerstrum. Claims 3-5, 7-8, 27-28, and 30-31 were rejected over the combination of Sano, Wennerstrum and Dhaemers. Claims 6, 9, 29, and 33-34 were rejected over the combination of Sano, Wennerstrum, Dhaemers, and Hunter. Claims 10, 21, and 32 were rejected over the combination of Sano, Wennerstrum, Dhaemers, and Davis.

Applicant responded to this Office Action by amending Claim 23 and advancing arguments in favor of patentability.

On June 7, 2006 the Examiner issued a final Office Action maintaining the rejections as outlined above in the same combinations and using the same reasoning. On November 3, 2006 Applicant filed a Request for Continued Examination advancing arguments for patentability and also filing affidavits to establish evidence of objective indicia of nonobviousness. These affidavits are attached to this brief as an evidence exhibit. In response to the Applicant's November 3, 2006 Request for Continued Examination, the Examiner issued a first Office Action dated January 29, 2007. The Examiner maintained the same rejections on the same basis as outlined above. The examiner entered the Affidavits filed by Jan T. Womble, Christopher Bacchi, and Ali Regimand and considered them. The Examiner reasoned the affidavits failed to establish patentability stating they: "Contains merely affiants opinions without supporting test data and conclusions. Furthermore, the affidavits do not include the claimed features to support and prove the criticality of the pressure from 0 to 10 TORR." Applicant responded to the first Office Action rejections of the Examiner in a Response to the Office Action mailed on April 26, 2007.

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The Examiner entered a final Office Action finally rejecting the claims pending in the application on July 25, 2007. In response to this final Office Action, the applicant canceled the withdrawn claims from the application leaving the remaining claims ripe for consideration in an Appeal.

Claims 1, 3, 4, 5, 6, 7, 8, 9, 10, 21, 23, 27, 28, 29, 30, 31, 32, 33, and 34 remain in the application. Claims 2, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 35, 36, 37, 38, 39, 40, 41, 42, and 43 are canceled from the application. The claims remaining in the application have been finally rejected. The Applicant entered an Appeal on October 18, 2007 appealing the final rejections of Claims 1, 3-10, 21, 23, 27-34.

#### STATUS OF THE AMENDMENTS

All amendments offered by the Applicant have been entered by the Examiner and there are no pending amendments. Claims set out in the Appendix include all entered amendments.

#### SUMMARY OF THE CLAIMED SUBJECT MATTER

Claims 1 and 23 are independent claims. The explanation of the subject matter defined for each of these independent claims will be given first. Thereafter, dependent claims, which are argued separately, will have an explanation. Where appropriate, the specification will be referred to by page and line number. The drawings will be referred to by page number and by reference characters. For clarity, the specification heading and titles will not be counted in determining line numbers.

##### Claim 1

Claim 1 is an independent claim. It has four elements defined in subparagraphs (a)-(d).  
Claim 1 is a method for rapid drying of a porous sample of material with steps of:

“(a) placing a porous sample of material into a sealable chamber.”

Page 11, lines 9-11 described placing a sample inside the sample chamber (100, Figure 2) by removing the sample lid (111, Figure 2)

“(b) creating a strong vacuum inside said chamber by evacuating air from inside of said chamber after it is sealed until air pressure inside of said chamber is less than 10 TORR.”

Evacuation of the vacuum pump (200, Figure 2) is described on application page 11, line 12 and at other various places in the application. It is explained desirable to have a high vacuum to completely dry the sample (application page 7, line 15) to 10 TORR.

“(c) passing evacuated air from said sealable chamber through a cold trap to trap moisture in said evacuated air.”

It is explained on application page 11, lines 22-23 and page 12, lines 1-2 it is explained that air is passed through a cold trap (300, Figure 2) to the vacuum pump (200, Figure 2). Air is evacuated to a preset level of vacuum in the chamber (application page 12, lines 4-5).

“(d) heating interior of said sealable chamber to a temperature within a predetermined range.”

It is explained in application page 11, lines 11-15 that it is desirable to heat the air directly of an infrared heater (310, Figure 2). Direct heat is more efficient than drawing heated air through the chamber (100, Figure 2). The temperature is monitored by temperature sensors (311 and 101, Figure 2)(application page 11, lines 16-17). It is explained it is undesirable to have the temperature to become too low or too hot (application page 11, lines 18-21).

#### Claim 23

Claim 23 is the other independent claim still pending in the application. Claim 23 is an apparatus claim with four elements. Claim 23 calls for “An apparatus for rapid drying a porous sample of construction material” with sub-elements:

“(a) a sealable chamber with at least one outlet.”

The chamber (100, **Figure 2**) is described in the application on page 11, lines 9-11. A sample is placed inside the sample chamber (100) by removing the sample lid (111, **Figure 2**). The sealable chamber (100) has at least outlet (120, **Figure 2**)(application page 11, line 23).

“(b) a cold trap in fluid communication with said sealable chamber through said outlet.”

The cold trap (300, **Figure 2**) is described as between the outlet (120) and the vacuum pump (200, **Figure 2**).

“(c) means for creating a strong vacuum in fluid communication with cold trap in said sealable chamber with whereby said means for creating a vacuum will evacuate air from said sealable chamber until air pressure in sealable chamber is less than 10 TORR, said evacuated air passing through said cold trap before reaching said means for creating a vacuum.”

The means for creating a vacuum is the vacuum pump (200) in communication with said sealable chamber (100 through said outlet (120). A predetermined measurement of a parameter is used to measure moisture in the sample (application page 12, lines 2-3). One parameter is a preset level of vacuum in the chamber (application page 12, line 4). A desirable preset level of vacuum is when the pressure inside the chamber drops below 10 TORR (application page 7, lines 14-16).

“(d) means for heating said sealable chamber to heat said porous sample inside of said sealable chamber to within a predetermined temperature range.”

The infrared heater (310, **Figure 2**) is used to directly heat the sample inside the chamber (100) (application page 11, lines 9-11). The infrared heater (310) is operated in a controlled manner at the same time the vacuum pump (200) is operating. The use of an infrared heater allows the sample inside the chamber (100) to be heated directly which is more efficient than drawing

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heated air through the chamber (100) (application page 11, lines 11-15). Because it is not necessary to allow heated air to enter the sample chamber (100) to heat the sample, the vacuum can be maintained at the highest level (application page 11, lines 22-23).

#### Method Claims Dependent on Claim 1

Claims 3-10 all depend on Claim 1 and add further elements.

#### Claim 3

Claim 3 elaborates that the method heating step includes supplying infrared light energy to the interior of the sealable chamber (100). An infrared heater (310, **Figure 2**) is used to directly heat the sample (application page 11, lines 9-10).

#### Claim 4

This is a method of Claim 3 that adds the step of heating the interior of the chamber to room temperature range. This step is described in the application on page 11, lines 17-21.

#### Claim 5

Claim 5 adds the step of monitoring a specific parameter to determine if sufficient moisture is removed from the sample in the sample chamber. This is explained in the application on page 12, lines 2-3. When sufficient moisture is removed, the test cycle is deemed complete.

#### Claim 6

Claim 6 elaborates on Claim 5 by specifying monitoring steps includes serial weighing of the sample while in the chamber. This is described in the application on page 12, line 4.

#### Claim 7

Claim 7 depends on Claim 5 that the monitoring step include monitoring the vacuum in the chamber until it reaches a predetermined level. This is described in the application on page 12, lines 2-3. The predetermined level is described in the application on page 7, line 15.

Claim 8

Claim 8 further elaborates on the monitoring requiring the use of the humidity sensor (350, **Figure 2**) in the outlet (120, **Figure 2**) and is described in the application on page 12, lines 4-5.

Claim 9

Claim 9 also depends on Claim 5 and monitors the sample by weighing the sample when removed from the chamber (100, **Figure 2**). This is described in the application on page 12, line 4.

Claim 10

Claim 10 adds a step of using a heating pad in said sealable chamber. The heating pad (700, **Figure 1**) may be employed to facilitate evaporation of water drops that may fall off the sample when the sample is placed inside the sample chamber (100) (application page 12, lines 8-9).

Apparatus Claims Dependent on Claim 23

Claims 27-34 all depend on Claim 23 and add additional elements.

Claim 27

Claim 27 specifies that the means for heating in Claim 23 is an infrared heater (310, **Figure 2**). (application page 11, lines 9-10).

Claim 28

Claim 28 further includes a means for monitoring a specific parameter to determine if moisture is removed from the sample. This is explained in the application on page 12, lines 2-3. When sufficient moisture is removed, the test cycle is deemed complete.

Claim 29

Claim 29 specifies that the means for monitoring is a load cell (600, **Figure 2**) which

serially or continuously weighs the sample while it is within the sample chamber (100) described in the application on page 12, line 4.

Claim 30

Claim 30 specifies that the means for monitoring comprises a means for measuring whereby said sealable chamber is maintained at a particular vacuum level. That is described in the application on page 12, lines 4-5 and on page 7, line 15.

Claim 31

Claim 31 specifies the means for monitoring comprises a humidity sensor (350, Figure 2).

Claim 32

Claim 32 depends on Claim 28 and further provides that the means for heating includes not only an infrared lamp but also a heating pad (700) as shown in Figure 1 and is employed to facilitate evaporation of water drop samples that fall from the samples in the sample chamber (100) (application page 12, lines 8-9).

Claim 33

Claim 33 provides that the load cell (600) is placed external to the sealable chamber. Samples are moved from the sealable chamber to be weighed to determine moisture. This is described in the application on page 12, lines 4-7.

Claim 34

Claim 34 depends on Claim 33 and provides a controller means. The controller (500, Figure 2) is connected by wires (501, Figure 2). (application page 10, lines 8-10).

GROUND FOR REJECTION TO BE REVIEWED ON APPEAL

Claim 23 was rejected under 35 U.S.C. 102(b) as being anticipated by Wennerstrum et al.,

U. S. Patent #4,882,851. In the alternative, Claim 23 was rejected under 35 U.S.C. 103(a) over Wennerstrum et al. '851.

Claims 27-28, 30-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum et al. '851 and further in view of Dhaemers, U. S. Patent #5,546,678.

Claims 29, 33-34, were rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum et al. '851 in view of Dhaemers '678 as applied to Claims 5, 28 above and further in view of Hunter et al., U. S. Patent #6,085,443. Claim 32 was rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum et al. '851 in view of Dhaemers '678 as applied to Claims 5, 28 above and further in view of Davis et al., U. S. Patent #6,410,889.

Claim 1 was rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum et al. '851 and in view of Sano et al., U. S. Patent #4,107,449.

Claims 3-5, 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum et al. '851 in view of Sano et al. '049 as applied to Claim 1 above and further in view of Dhaemers '678. Claims 6 and 9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum et al. '851 in view of Sano et al. '049 and Dhaemers '678 as applied to Claim 5 above and further in view of Hunter et al. '443. Claims 10 and 21 were rejected under 35 U.S.C. 103(a) as unpatentable over Wennerstrum et al. '851 in view of Sano et al. '049 and Dhaemers '678 as applied to Claim 5 above and further in view of Davis et al. '889.

Claims 1 and 23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. '449 in view of Wennerstrum et al. '851.

Claims 3-5, 7-8, 27-28, and 30-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. '049 in view of Wennerstrum et al. '851 as applied to Claims 1 and 23 above and further in view of Dhaemers '678. Claims 6, 9, 29, and 33-34 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. '049 in view of Wennerstrum et al. '851 and



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### ARGUMENT

The Applicant/Appellant structure argument in favor of patentability of the claims remaining in the application is based on the Examiner's last Office Action and the Order of the Examiner's rejections in the Final Office Action.

#### Claim 23

Claim 23 was rejected under 35 U.S.C. 102 (b) as anticipated by or, in the alternative, under 35 U.S.C. 103 (a) as obvious over Wennerstrum et al, U.S. Patent # 4,882,851. The Examiner reasons because the Wennerstrum et al '851 patent is broadly similar in construction to the current invention the "claim is structurally met." The Examiner states that Wennerstrum shows: "...an apparatus for drying a sample comprising a sealable chamber (10), cold trap (34), a pump (40) for creating a vacuum and heating means (12) for supplying electromagnetic energy to the interior of the sealable chamber (10), pressure sensors (76) for measuring the vacuum and control means (42) which are arranged the same as claimed." The Wennerstrum reference does disclose a vacuum dryer using a microwave to heat the interior of the vacuum chamber. However, it is designed for batch drying of a powdered or particulate product. The Wennerstrum patent states it is particularly designed to overcome the disadvantages of previous microwave vacuum dryers of uneven microwave distribution within the drying chamber. The Wennerstrum disclosure points out that a sharp metal point producing microwaves with a high field strength results in areas of extreme energy concentration. (Wennerstrum, column 2, lines 5-23) Wennerstrum is designed to result in an adjustment of the microwave field to compensate for reduced energy absorbed by solvents since less solvent is present in the particulate powder which is undergoing the drying process. If the microwave field is not reduced it leads to rapid temperature change. Consequently, Wennerstrum

concludes that "complete drying is rarely desirable" (emphasis added). (Wennerstrum, column 3, line 22) Consequently, it is desirable in the Wennerstrum patent to control the vacuum to a range that does not result in complete drying. Wennerstrum explains that: "In most drying operations the vacuum is pulled until the pressure in the drying chamber is between 10 and 35 TORR." (Wennerstrum, column 13, line 23) The Wennerstrum reference has no discussion regarding specifics of the pump (10). It simply refers to a vacuum pump (10). The Wennerstrum invention is one of the many processes where it is undesirable or dangerous to have a vacuum below a certain level. For example, in medical applications, such as respiratory therapy, which uses suctioning to clear secretions from the throat of a patient, a strong vacuum could damage delicate tissues. The same is true in dental applications where a vacuum pump is used to keep the area of a tooth dry during dental work. Moreover, it is a matter of common knowledge that many vacuum pumps, such as hand held home vacuum cleaners, do not create a vacuum less than 10 TORR. Consequently, in so far as the Wennerstrum application discloses a vacuum pump, it does so in a fashion that would suggest, if not mandate, that the Wennerstrum vacuum pump operates in a range between 10 TORR and 35 TORR, so that complete drying does not occur in the sample within the vacuum chamber. This is in contrast to the current application where pressure inside the chamber is reduced below 10 Torr so that the "chamber is completely dry" and that "there is no moisture in the system." (Application, page 7, lines 15 and 16) The Examiner, concludes without offering any evidence and contrary to the specific teaching of the Wennerstrum application itself, that "the pump (40) of Wennerstrum et al is capable of evacuating air from the sealable chamber (10) until air pressure in the sealable chamber is less than 10 TORR." The Appellant traverses this conclusion of the Examiner. Examiner goes on to reason that "...assuming that 'less than 10 Torr pressure' can be accorded any patentable weight and since, the structure of Wennerstrum et al is the same as the broad claim, then it would have been obvious to operate the sealable chamber (10) at less than 10 TORR in order to obtain the optimal result." The Examiner does not state what is meant by the term "optimal result." Applicant notes that the Wennerstrum patent itself states that the optimum result does not result in "complete drying." (Wennerstrum, column 3, line 22) Wennerstrum is in contrast to Applicant's invention when the the optimal result is a complete drying of the sample as rapidly as possible. Consequently, the Examiner's conclusion that reducing the pressure below 10 TORR is necessary to receive an optimal result is taught solely by the Applicant's invention and is

contrary to and in contradiction to the teaching of the Wennerstrum reference. Consequently, the Examiner uses the Applicant's own teaching of the necessity of complete drying as an optimal result and the necessity to reduce the vacuum below 10 TORR to hold the Applicant's invention obvious.

In Claim 23 the Applicant has a specific limitation that requires a means for creating a vacuum of less than 10 TORR. Wennerstrum has a vacuum pump, but teaches that the desirable range is 10 TORR to 35 TORR. Without explanation the Examiner simply assumes that Wennerstrum's pump can achieve a vacuum less than 10 TORR to prove that Wennerstrum is a 102 reference. The Applicant traverses this unsupported assumption of the Examiner. Apparently unsure of this assumption, the Examiner then applies §103 to hold Claim 23 obvious by saying that a vacuum of less than 10 TORR is obvious because it is an "optimal result." This is in direct contradiction of the teaching of Wennerstrum which states that complete drying of the sample is undesirable, and that the vacuum should be at a range of 10 TORR to 35 TORR. The conclusion of the Examiner regarding obviousness of a vacuum less than 10 TORR because it is an "optimal result", is a mere conclusion unsupported by any articulated reasoning with some rational underpinning to support the conclusion of obviousness. In Re Kahn, 441 F.3d 997,998 (CA Fed. 2006). The Examiner is using the teaching of the Applicant's application to hold the Applicant's invention obvious, a classic hindsight reconstruction using the Applicant's disclosure as a template.

#### Claims 27-28 and 30-31

Claims 27-28 and 30-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum '851 in view of Dhaemers, U. S. Patent #5,546,678. The Examiner concluded that Dhaemers is teaching a drying apparatus and method with an infrared light (73) for heating the chamber (41) and a humidistat (112) for measuring humidity in the chamber (41). The Applicant traverses this conclusion of the Examiner regarding the Dhaemers '678 patent. Dhaemers discloses a large dryer (10) with a housing (11) and a drying chamber (41). A heater (73) is used to heat air, which is then directed by a fan (74) in an air grill (73) into the heating chamber (41). In Dhaemers, the heater (73) in the preferred embodiment is an electric resistance coil but infrared light is also mentioned as a way of heating air to enter the heating chamber. Consequently, the Examiner's

conclusion that Dhaemers heats the chamber (41) using infrared light is factually incorrect. The factual mistake of the Examiner assumes extra importance when one considers the Examiner imposed a restriction requirement on the Applicant. In the unelected embodiment shown in **Figure 5**, a heater (310) heats air which is allowed to enter the sample chamber (100) during a portion of the drying cycle (application page 12, lines 10-14). Consequently, the Examiner stated in the restriction requirement that the embodiment disclosed in **Figure 5** is patentably distinct from the elected embodiment disclosed in **Figure 2**. Applicant traversed that the Examiner's conclusion that the species shown in **Figure 1** and **Figure 5** were patentably distinct from each other. Applicant requested clarification from the Examiner whether there were two or three patentably distinct inventions. Applicant further requested Examiner explain why there was a burden on the Examiner proceeding on this application without a restriction requirement. The Examiner noted that the Applicant's traversal was based on the grounds that **Figures 1** and **5** are not distinct inventions. Consequently, it is a matter of a record that the species shown in **Figure 5** and the species shown in **Figure 2** are patentably distinct from each other. Consequently, the species shown in **Figure 5** where air is heated to enter the chamber as in Dhaemers, is considered a nonobvious variant of the elected species shown in **Figure 2** and Applicant traverses the conclusion of the Examiner that Dhaemers, which would clearly be prior art for **Figure 5**, also is prior art for the elected species shown in **Figure 2**.

Notwithstanding the above reasons Dhaemers should not be considered as prior art in this application for the elected species shown in **Figure 2**, Dhaemers does not, as the Examiner concludes, heat the chamber (41) by infrared energy. The particular arrangement of using an infrared lamp to directly heat the sample chamber is neither disclosed by the Wennerstrum direct microwave energy source or by the Dhaemers indirect heated air (whether the air is heated by an electric resistance coil or by an infrared light is irrelevant). Wennerstrum recognizes that microwave energy can create hot spots in the material contained in the vacuum chamber. Wennerstrum proposes that these hot spot can be overcome by agitators for the material being dried in the Wennerstrum process. However, agitators are unacceptable for the Applicant's elected embodiment shown in **Figure 2**. A sample placed inside the Applicant's vacuum chamber is porous material which may be subject to further testing. Consequently, anything that changes the material integrity